

ABSTRACT OF THE DISCLOSURE

A lateral conduction Schottky diode includes multiple mesa regions upon which Schottky contacts are formed and which are at least separated by ohmic contacts to reduce the current path length and reduce current crowding in the Schottky contact, thereby reducing the forward resistance of a device. The multiple mesas may be isolated from one another and have sizes and shapes optimized for reducing the forward resistance. Alternatively, some of the mesas may be finger-shaped and intersect with a central mesa or a bridge mesa, and some or all of the ohmic contacts are interdigitated with the finger-shaped mesas. The dimensions of the finger-shaped mesas and the perimeter of the intersecting structure may be optimized to reduce the forward resistance. The Schottky diodes may be mounted to a submount in a flip chip arrangement that further reduces the forward voltage as well as improves power dissipation and reduces heat generation.

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